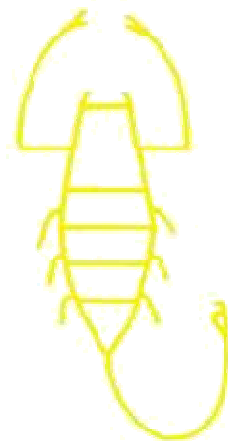




SERKET



**The Arachnological Bulletin
of the Middle East and North Africa**

**Volume 12
May, 2010**

**Part 1
Cairo, Egypt**

ISSN: 1110-502X

SERKET

Volume 12

Part 1

May, 2010

Cairo, Egypt

Contents

	Page
<i>Leiurus abduallahbayrami</i> (Scorpiones: Buthidae), a new species for the scorpion fauna of Syria	
Nazir Khalil & Ersen Aydın Yağmur	1
The first record of genus <i>Argyrodes</i> Simon, 1864 (Araneae: Theridiidae) from Turkey	
Rahşen S. Kaya, Kadir Boğaç Kunt, Yuri M. Marusik & Ersen Aydın Yağmur	7
New records of ground spiders from Turkey (Araneae: Gnaphosidae)	
Osman Seyyar & Hakan Demir	13
Additional notes on crab spider fauna of Turkey (Araneae: Thomisidae and Philodromidae)	
Hakan Demir, Metin Aktaş & Aydın Topçu	17
Hersiliidae of Sudan (Araneida: Hersiliidae)	
Hisham K. El-Hennawy	23

Subscription for volume 12 (2010-2011):

US \$ 25.00 (personal rate), US \$ 35.00 (institutional rate)

Back issues : Volume 1 (1987-1990), Vol. 2 (1990-1992), Vol. 4 (1994-1996), Vol. 5 (1996-1997), Vol. 6 (1998-2000), Vol. 7 (2000-2001), Vol. 8 (2002-2003), Vol. 9 (2004-2005), 10 (2006-2007), 11 (2008-2009):

US \$ 25.00 (p.r.), US \$ 35.00 (i.r.) per volume

Volume 3 (1992-1993): US \$ 35.00 (p.r.), US \$ 45.00 (i.r.)

Correspondence concerning subscription, back issues, publication, etc. should be addressed to the editor: **Hisham K. El-Hennawy**

Postal address: **41, El-Manteqa El-Rabia St., Heliopolis, Cairo 11341, Egypt.**

E-mail: el_hennawy@hotmail.com Webpage: <http://serket2008.multiply.com>

ISSN: 1110-502X

***Leiurus abdullahbayrami* (Scorpiones: Buthidae), a new species for the scorpion fauna of Syria**

Nazir Khalil ¹ and Ersen Aydın Yağmur ²

¹ Department of Animal Biology, Faculty of Sciences, Damascus University, Damascus, Syria

E-mail: khalil-n@scs-net.org

² Department of Biology, Zoology Section, Faculty of Science, Ege University, TR-35100, İzmir, Turkey

E-mail: ersen.yagmur@gmail.com (For correspondence)

Abstract

This study reports second *Leiurus* species recorded first time for the Syrian scorpion fauna. The scorpion *Leiurus abdullahbayrami* Yağmur, Koç & Kunt, 2009, was recorded from Al-Hasakah Province and Homs Province. Morphology, ecological conditions and geographical distribution of the species are discussed.

Keywords: *Leiurus abdullahbayrami*, distribution, scorpions, Syria.

Introduction

Little has been recently published on the scorpion fauna of Syria. Scorpion species of 3 families, Buthidae, Euscorpiidae and Scorpionidae, are represented in Syria under consideration. It is relatively diverse, 11 genera with 21 species being known with certainty. These species are: *Androctonus amoreuxi* (Audouin, 1825); *A. bicolor* Ehrenberg, 1828; *A. crassicauda* (Olivier, 1807); *Birulatus astartiae* Stathi & Lourenço, 2003; *Buthacus leptochelys* (Ehrenberg, 1829); *B. macrocentrus* (Ehrenberg, 1828) (= *B. tadmorensis*); *Compsobuthus carmelitis* Levy, Amitai & Shulov, 1973; *C. jordanensis* Levy, Amitai & Shulov, 1973; *C. longipalpis* Levy, Amitai & Shulov, 1973; *C. matthiesseni* (Birula, 1905); *C. schmiedeknechti* Vachon, 1949; *C. wernerii* (Birula, 1908); *Hottentotta judaicus* (Simon, 1872); *H. saulcyi* (Simon, 1880); *Leiurus quinquestriatus* (Ehrenberg, 1828); *Mesobuthus eupeus* (C.L. Koch, 1839); *M. nigrocinctus* (Ehrenberg, 1828); *Orthochirus innesi* Simon, 1910 (Buthidae); *Nebo hierichonticus* (Simon, 1872); *Scorpio maurus* Linnaeus, 1758 (Scorpionidae); and *Euscorpius mingrelicus* (Kessler, 1874) (Euscorpiidae) (Kinzelbach, 1985; Khalil, 1997; Kabakibi *et al.*, 1999; Fet & Lowe, 2000; Stathi & Lourenço, 2003; Kovařík, 2003; Kovařík, 2004; Kaltsas *et al.*, 2008). Of these, only *Birulatus astartiae* is endemic for

Syria (Stathi & Lourenço, 2003). Since humid habitats are scarce in Syria, *Euscorpius mingrelicus* record is dubious.

Leiurus (Buthidae) in Syria is still poorly known and its geographic range remains rather uncertain. Previously, only *Leiurus quinquestriatus* (including one subspecies, *L. quinquestriatus hebraeus*) was known from Syria (Vachon, 1966; Levy & Amitai, 1980; Kabakibi & Khalil, 1997; Kabakibi *et al.*, 1999; Kaltsas *et al.*, 2008). However, *Leiurus abdullahbayrami* Yağmur, Koç & Kunt, 2009, is the second species of *Leiurus*, recorded for the first time, from Syria.

Material and Methods

Field studies were performed during the period between 30.06.2009 and 30.09.2009 in central and northeastern Syria (Al-Hasakah Province, Homs Province). Three specimens (one male and two females) have been collected under stones in daytime, and fixed in 70% ethanol. The specimens were examined under binocular microscope. Measurements (in mm) were taken with a 0.01 mm accurate Stainless Electronic Digital caliper using the methods described by Stahnke (1970).

In addition, 40 specimens of *Leiurus* were examined that had been collected from southern Syria between 1995-1996 and deposited in the zoology collection of Damascus University.

Abbreviations

MTAS: Museum of Turkish Arachnology Society, Ankara, Turkey.

ZCDU: Zoology Collection of Damascus University, Damascus, Syria.

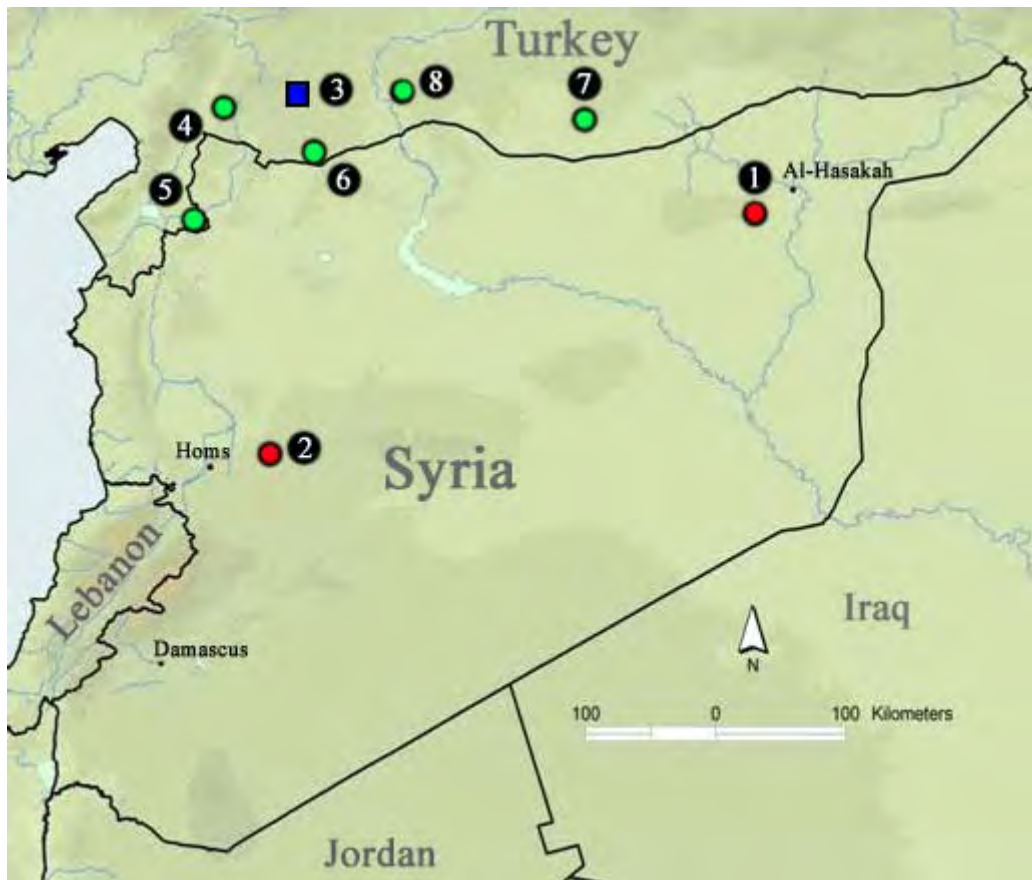


Fig. 1. Sampling localities of *Leiurus abdullahbayrami* in Syria and Turkey. [1-8: see Results]

Results

Material Examined: 1. 1♀, 1♂. Al-Hasakah Province, eastern Abd Al-Aziz Mountain, 40 km SW Al-Hasakah, 12.07.2009, 36°23'20"N, 40°22'01"E, 674 m a.s.l., N. Khalil leg. (MTAS), 2. 1♀. Homs Province, Al-Mukharrem Region, Al-Sankari Village, 04.07.2009, 34°48'46"N, 37°09'32"E, 655 m a.s.l., N. Khalil leg. (MTAS). In addition to 40 specimens of *Leiurus quinquestriatus* from southern Syria are deposited at the ZCDU.

Literature Records: 3. Turkey, Gaziantep Province, Şahinbey District, Sarısalkım Village, 37°05'46.5"N, 37°16'51.3"E, 1029 m a.s.l. (Type locality), 4. Turkey, Gaziantep Province, İslahiye District, 36°54'00"N, 36° 44'43"E, 487 m a.s.l., 5. Turkey, Hatay Province, Reyhanlı District, Oğulpınar Village, 36°15'13"N, 36°40'12"E, 316 m a.s.l., 6. Turkey, Kilis Province, Elbeyli District, Çamurluhöyük mound, 36°39'36"N, 37°28'31"E, 525 m a.s.l., 7. Turkey, Şanlıurfa Province, Harran District, Şuayipşehir Village, 36°52'36.9"N, 39°22'18.9"E, 506 m a.s.l., 8. Turkey, Şanlıurfa Province, Birecik District, Yukarı Habib Village, 37°08'49"N, 37°59'56"E, 670 m a.s.l. (Yağmur *et al.*, 2009).

Description of *Leiurus abdullahbayrami*: The background colour of prosoma, mesosoma and segment V of metasoma is black, appendages are yellowish. Centrolateral and posteriomedian carinae fused lyre-shaped form. Tergites I and II bear five carinae. Trichobothrium *db* on the fixed finger of the pedipalp is located between trichobothria *est* and *esb*. Fixed finger with 11 oblique granule rows. Movable fingers of pedipalps with 4 distal and 11 oblique granule rows. The ventrolateral carinae of metasomal segment V are armed with large and rounded granules. The anal arch comprises 3 rounded lobes laterally and 6 small lobes posteriorly. Sternites IV-VI are smooth. The pedipalp average length/width ratio is 4.54 in the male and 4.49 in the two females. Leg I-IV with short spines on the ventral side of tarsus. Basitarsus of legs I-III with bristlecombs, basitarsus of legs IV without bristlecombs. Measurements of specimens of *L. abdullahbayrami* from Al-Sankari Village and Abd Al-Aziz Mountain are given in Table (1). Pectinal tooth counts in male 37-38, in females 30-31 and 34-34.

Habitat: This species was found in semi-arid regions on dry calcareous soils, with scattered short vegetation, far from human settlements. It is generally found in steppe and rocky areas (Figs. 2 & 3). The specimens were found in small holes under stones. *L. abdullahbayrami* was observed to share the same habitat in Al-Hasakah Province with *Androctonus crassicauda* and in Homs Province with *Scorpio maurus*.



Fig. 2. *Leiurus abdullahbayrami* habitat (Al-Sankari Village, Homs Province).

Table 1. Measurements (in mm) of *Leiurus abdullahbayrami* specimens from Syria.

		Female from Al-Sankari, Homs	Female from Abd Al-Aziz Mountain	Male from Abd Al-Aziz Mountain
Total	length	64.25	67.70	55.73
Carapace	length	7.17	8.42	6.82
	width	7.16	8.25	6.69
Mesosoma	length	22.99	18.82	13.87
Metasoma	length	34.49	41.95	35.37
Segment I	length	4.89	5.16	4.49
	width	4.17	4.85	3.97
Segment II	length	5.07	6.12	5.53
	width	3.73	4.39	3.62
Segment III	length	5.81	6.44	5.68
	width	3.60	4.23	3.55
Segment IV	length	6.21	7.02	6.35
	width	3.55	3.94	3.33
Segment V	length	7.56	8.59	7.68
	width	3.22	3.87	3.06
Telson	length	6.28	9.14	7.83
	width	2.94	3.86	3.39
	depth	2.67	3.33	2.54
Vesicule	length	4.51	5.72	4.48
Sting	length	3.20	3.55	3.40
Pedipalp				
Femur	length	5.54	7.20	5.77
	width	1.75	2.75	1.72
	depth	2.13	1.69	1.37
Patella	length	6.32	7.17	6.46
	width	2.43	3.41	2.40
	depth	1.90	2.32	2.76
Chela	length	10.49	12.78	10.72
	width	2.23	2.95	2.36
	depth	1.93	2.54	2.04
Movable finger	length	6.88	8.40	7.81
Fixed finger	length	5.89	7.06	6.55
Manus	length	3.70	4.22	4.42

Discussion

Leiurus abdullahbayrami was originally described from Turkey (Yağmur *et al.*, 2009). It was recorded very close to Turkish-Syrian border. Therefore, it is suggested to be present in Syria. Levy & Amitai (1980) recorded *L. quinquestriatus* 60 km east of

Homs and east of Palmyra. These two localities are very close to our Al-Sankari (Homs) record of *L. abdullahbayrami*. Therefore, it is possible that *L. abdullahbayrami* from Homs region was misidentified by Levy & Amitai (1980) as *L. quinquestriatus*.

The colouration patterns indicated that three different populations of *L. abdullahbayrami* occur in Turkey (Yağmur *et al.*, 2009). The prosomal and mesosomal colouration of our specimens which were collected from Al-Hasakah is grey and fits to colouration pattern of Şanlıurfa population of Turkey (Fig. 1, No. 7). Al-Hasakah locality is 130 km far from the easternmost population of Turkey (Şanlıurfa Province, Harran District, Şuayipşehir Village), so it is not surprising to find this species from Al-Hasakah locality.

The colouration of Al-Sankari Village (Homs) specimen is black on prosoma with yellow spots and black on mesosoma. Its colouration pattern fits to Gaziantep and Kilis population of Turkey (Fig. 1, No. 6). Homs locality is 200 km far from the southernmost locality of this population (Kilis Province, Elbeyli District) and some sandy soil begins to occur in south and east parts of Homs Province. On the other hand, Turkish populations of *L. abdullahbayrami* were not recorded in sandy area. In addition, the average total precipitation there is less than 150 mm annually. However, the species was observed on various altitudes in Syria and Turkey (506-1535 m a.s.l.). The Al-Sankari Village (Homs) record extends the distribution of *L. abdullahbayrami* to more southern area, and perhaps this locality is the southern border of distribution.



Fig. 3. *Leiurus abdullahbayrami* habitat (Abd Al-Aziz Mountain, Al-Hasaka Province).

Acknowledgments

We wish to thank Hisham El-Hennawy (Egypt), Dr. Halil Koç (Sinop University, Turkey) and anonymous reviewers for corrections and suggestions on the manuscript.

References

- Fet, V. & Lowe, G. 2000. Family Buthidae. pp. 54-286. In: Fet, V., Sissom, W.D., Lowe, G. & Braunwalder, M.E. *Catalog of the Scorpions of the World (1758-1998)*. The New York Entomological Society, New York. 690 pp.
- Kabakibi, M. & Khalil, N. 1997. Study of the distribution of two scorpion: *Leiurus quinquestriatus* (Buthidae), *Scorpio maurus* (Scorpionidae) south of Syria. *Damascus University Journal, Basic Sciences*, 13(1): 113-130. (in Arabic).
- Kabakibi, M., Khalil, N. & Amr, Z. 1999. Scorpions of southern Syria. *Zool. Middle East*, 17: 79-89.

- Kaltsas, D., Stathi, I. & Fet, V. 2008. Scorpions of the Eastern Mediterranean. S. E. Makarov & R. N. Dimitrijevic (Eds.) In: Makarov, S.E. & R.N. Dimitrijevic (eds.). *Advances in Arachnology and Developmental Biology. Papers dedicated to Professor Bozidar P.M. Curcic. Belgrade-Vienna-Sofia*, 209-246.
- Khalil, N. 1997. Scorpions of southern Syria (taxonomy, distribution and ecology). M.Sc. Thesis, Faculty of Sciences. Damascus University. 211 pp. (in Arabic).
- Kinzelbach, R. 1985. Vorderer Orient. Skorpione (Arachnida: Scorpiones). *Tübinger Atlas des Vorderen Orients, Karte Nr. A VI 14.2*.
- Kovařík, F. 2003. Eight new species of *Compsobuthus* Vachon, 1949 from Africa and Asia (Scorpiones: Buthidae). *Serket*, 8(3): 87–112.
- Kovařík, F. 2004. Revision and taxonomic position of genera *Afghanorthochirus* Lourenço & Vachon, *Baloorthochirus* Kovařík, *Butheolus* Simon, *Nanobuthus* Pocock, *Orthochiroides* Kovařík, *Pakistanorthochirus* Lourenço, and Asian *Orthochirus* Karsch, with descriptions of twelve new species (Scorpiones, Buthidae). *Euscorpius*, 16: 1–33.
- Levy, G. & Amitai, P. 1980. *Fauna Palaestina. Arachnida 1: Scorpiones*. X + 134 pp. Jerusalem; Israel Academy of Sciences and Humanities.
- Stahnke, H.L. 1970. Scorpion nomenclature and mensuration, *Entomological News*, 81: 297-316.
- Stathi, I. & Lourenço W.R. 2003. Description of a new scorpion species of the genus *Birulatus* Vachon, 1974 (Scorpiones, Buthidae) from Syria. *Zool. Middle East*, 30: 105-110.
- Vachon, M. 1966. Liste des Scorpions connus en Égypte, Arabie, Israël, Liban, Syrie, Jordanie, Turquie, Irak, Iran. *Toxicon*, 4(3): 209-218.
- Yağmur, E.A., Koç, H. & Kunt, K.B. 2009. Description of a new species of *Leiurus* Ehrenberg, 1828 (Scorpiones: Buthidae) from Southeastern Turkey. *Euscorpius*. 85: 1-20.

Serket (2010) vol. 12(1): 7-12.

The first record of genus *Argyroides* Simon, 1864 (Araneae: Theridiidae) from Turkey

Rahşen S. Kaya¹, Kadir Boğaç Kunt², Yuri M. Marusik³ & Ersen Aydın Yağmur⁴

¹ Department of Biology, Faculty of Arts and Sciences, Uludağ University, TR-16059, Nilüfer, Bursa, Turkey

² Eserköy Sitesi, 9/A Blok, No 7, TR-06530, Ümitköy, Ankara, Turkey

³ Institute for Biological Problems of the North, Portovaya Str. 18, Magadan, 685000 Russia

⁴ Department of Biology, Zoology Section, Faculty of Science, Ege University, TR-35100, İzmir, Turkey

Corresponding e-mail address: rkaya@uludag.edu.tr, rahsens@gmail.com

Abstract

The theridiid spider *Argyroides argyroides* (Walckenaer, 1842) is recorded for the first time from Turkey. This represents a new spider genus and species record for Turkey. The characteristic features and drawings of both sexes are presented in this study.

Keywords: *Argyroides argyroides*, Theridiidae, new record, Turkey.

Introduction

The family Theridiidae Sundevall, 1833 is one of the most diverse spider families, with 2297 species in 112 genera (Platnick, 2010). Spiders of the subfamily Argirodinae are well known with their kleptoparasitic behaviour to the web-building spiders. Argirodinae comprises six genera, *Argyroides* Simon 1864, *Ariamnes* Thorell 1869, *Faiditus* Keyserling 1884, *Neospintharus* Exline 1950, *Rhomphaea* L. Koch 1872, and *Spheropistha* Yaginuma 1957. The latter five genera have been recently removed from synonymy with *Argyroides* (Agnarsson, 2004).

Argyroides Simon, 1864 is represented by 92 species and 5 subspecies and widespread throughout the tropics and warmer regions of the world (Platnick, 2010). Members of the genus are either kleptoparasitic or araneophagic, usually found in webs of larger spiders and they hang in the web upside-down with the front pairs of legs folded

(Exline & Levi, 1962; Levi & Levi, 1962). Males of many species of *Argyrodes* have bizarre projections or other modifications of cephalic region and clypeus. Some bear tubercles on the abdomen, or the abdomen is extended beyond the spinnerets (Exline & Levi, 1962). Only a single species, *Argyrodes argyrodes* (Walckenaer, 1842), is known in the Mediterranean region (Levy, 1985; Platnick, 2010). So far, 62 species of Theridiidae belonging to 21 genera have been recorded in Turkey, but no member of the *Argyrodes* has been recorded until now (Bayram *et al.*, 2010). Recently, only one argyrodine species, *Neospintharus syriacus* (O.P.-Cambridge, 1872), has been recorded from Turkey (Kaya *et al.*, 2009). This work adds *A. argyrodes* as a new species and genus record to the theridiid spider fauna of Turkey.

Material and Methods

The spider specimens were collected from two localities in Turkey (Fig. 1):
 Locality 1: İzmir [Karaburun District, 1 km North of Parlak Village (38°36'N, 26°23'E, 110 m)]: One female and one male specimens were collected from the webs of *Araneus circe* (Savigny, 1825) (Araneidae) on 06.06.2009, E.A.Yağmur leg.
 Locality 2: Antalya [Anamur - Gazipaşa road, 30 km to Gazipaşa (36°06'N, 32°31'E, 423 m)]: One female was collected from a web of Araneidae on 15.06.2009, R.S. Kaya leg.



Fig. 1. The localities from which the specimens were collected:
 1. İzmir (Karaburun District), 2. Antalya (Anamur – Gazipaşa).

The identification was made using the descriptions of Exline & Levi (1962: figs. 151-153), Levy (1985: figs. 15-28), Agnarsson (2004: figs. 31 A, B, C) and Agnarsson *et al.* (2007: figs. 52-53). The drawings were made by the means of a camera lucida attached to a Zeiss Stemi SR microscope and the measurements were taken by Leica M205 C stereo microscope. Measurements were taken from the dorsal side of the palps and legs. Colouration was described based on alcohol-preserved specimens. The samples were preserved in the collection of the Zoological Museum, Department of Biology, Uludağ University, Bursa, Turkey.

The taxonomy follows Platnick (2010) and the terminology of male palpus follows Levy (1985), Agnarsson (2004) and Agnarsson *et al.* (2007). The abbreviations used in the description are as follows: ALE = anterior lateral eye; AME = anterior median eye; PLE = posterior lateral eye; PME = posterior median eye.

Results

Family **Theridiidae** Sundevall, 1833

Genus ***Argyroides*** Simon, 1864

Argyroides argyroides (Walckenaer, 1842)

Linyphia argyroides Walckenaer, 1842, Histoire naturelle des Insectes Aptères, vol. 2, p. 282, type locality was uncertain and designed as Algeria by Exline & Levi, 1962 (type specimen lost).

For more references, see Platnick (2010).

Description (Figs. 2-8)

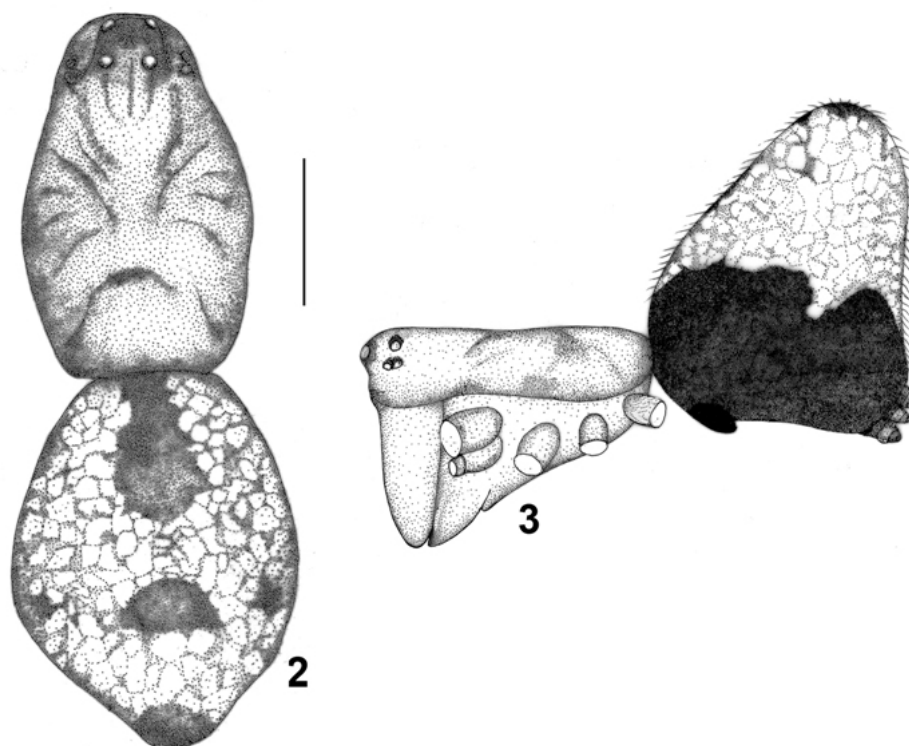
Female: General body measurements were given in Table (1). Carapace elongated and flattened. Carapace dark brown, dusky brown along margins and marginal line black. Ocular region high and eyes on a small cephalic projection. Ocular region and thoracic region with black lines. AME and ALE larger than PME and PLE; PLE almost touching. Anterior and posterior rows of eyes strongly recurved. Clypeus brownish and clypeus height about 4.5-5 times of the anterior lateral eye diameter. Chelicerae small, brownish without spots. Labium wider than long; gnathocoxae longer than wide. Labium and endites dark brown. Sternum longer than wide, triangular shaped, dark brown without spots and posterior end blunt. Legs slender, pale yellow with some dark annulations. Legs length formula: I-II-IV-III; first leg 1.6 times longer than second one. For legs and palp measurements see Table (2). Abdomen cone-shaped, higher than long and ending with a single tip. Dorsum of the abdomen grey, mottled white or with silvery patches, four black marks present. The cardiac mark is black and distinct (Figs. 2-3). Venter dusky brown to black with a few silver pigments anterior to the spinnerets.

Male: As female, except for the following: Carapace darker, cephalic region higher than in female, male has a slimmer and lower abdomen, legs darker, thinner and longer than in female. The male distinctly differs in the form of carapace, both large clypeal and cephalic projections. Clypeal and cephalic projections dorsally furnished with a brush of short hairs and cephalic projection bears the median eyes. Median eyes on an elevated area and lateral eyes located below their level (Figs. 4-5). Body, leg and palp measurements were given in Tables (1 & 2).

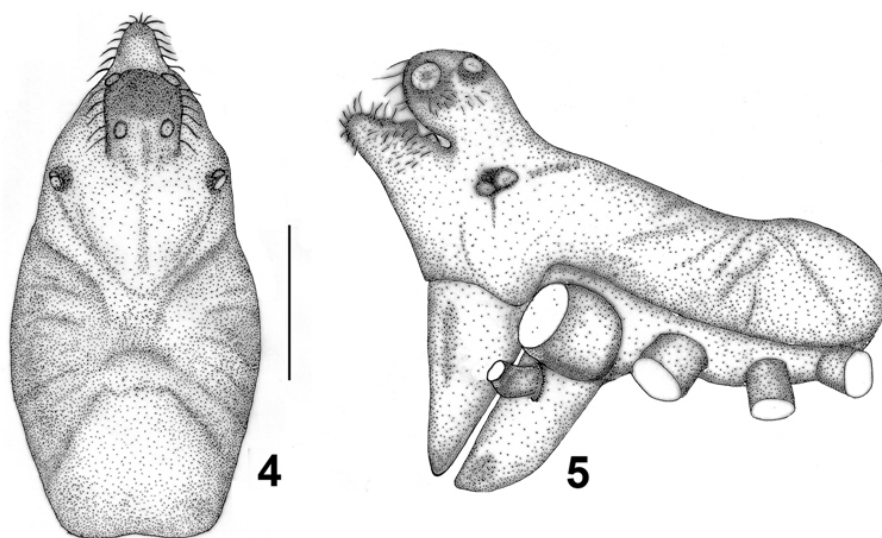
Table 1. Body measurements (in mm) of *Argyroides argyroides* (Walckenaer, 1842).

L = length, W = width, TBL = total body length.

	Carapace L	Carapace W	Abdomen L	Abdomen W	TBL
Male	1.77	0.9	1.32	1.0	3.09
Female	1.2 – 1.32	0.77 – 0.9	0.87 – 1.5	0.82 – 2.0	2.07 – 2.82



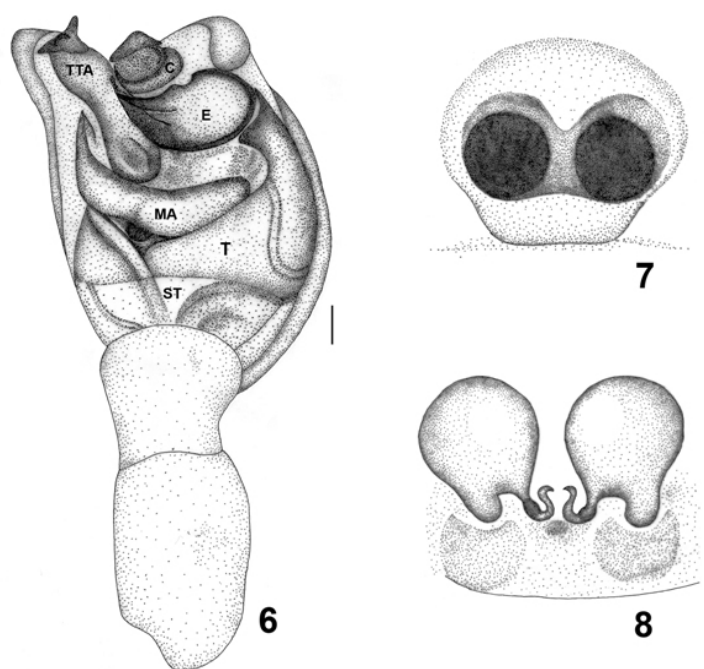
Figs. 2-3: Female habitus of *Argyrodes argyroides* (Walckenaer, 1842).
2. dorsal view. 3. lateral view. Scale line: 0.5 mm.



Figs. 4-5: Male carapace of *Argyrodes argyroides* (Walckenaer, 1842).
4. dorsal view. 5. lateral view. Scale line: 0.5 mm.

Table 2. Legs and pedipalp measurements (in mm) of male and female specimens of *Argyrodes argyroides* (Walckenaer, 1842).

		femur	patella	tibia	metatarsus	tarsus
Male	Pedipalp	0.87	0.42	0.12	–	0.7
	Leg I	2.8	0.5	2.45	2.02	1.02
	Leg II	1.75	0.4	1.1	1.37	0.85
	Leg III	0.95	0.32	0.52	0.6	0.47
	Leg IV	1.6	0.4	0.97	1.05	0.6
Female	Pedipalp	0.1 – 0.37	0.12 – 0.17	0.17 – 0.2	–	0.32 – 0.35
	Leg I	2.1 – 2.37	0.4 – 0.47	1.65 – 1.97	1.7 – 1.87	0.82 – 0.95
	Leg II	1.22 – 1.42	0.37 – 0.4	0.85 – 0.97	1.02 – 1.1	0.65 – 0.67
	Leg III	0.77 – 1.0	0.27 – 0.3	0.37 – 0.42	0.57 – 0.62	0.32 – 0.47
	Leg IV	1.2 – 1.4	0.35 – 0.4	0.6 – 0.65	0.9 – 0.95	0.52 – 0.55



Figs. 6-8: *Argyrodes argyroides* (Walckenaer, 1842). 6. Male left palpus, ventral view. 7. Female epigyne, ventral view. 8. Female vulvae, dorsal view. Abbreviations: C = conductor, E = embolus, MA = median apophysis, ST = subtegulum, T = tegulum, TTA = theridiid tegular apophysis. Scale lines: 0.1 mm.

Male palp (Fig. 6): Cymbium blackish brown, rather ovoid, femur slender and two times longer than patella, patella swollen, median apophysis large and long, conductor C-shaped, embolus large and with three branches, one longer, the second short and pointed, the third one is tight folding and intertwined with conductor, theridiid tegular apophysis long and elongated with a dark line basally and triangular shaped apically.

Epigynum and vulvae (Figs. 7-8): Epigynum has a sclerotized broad dark plate with two spherical spermathecae. Vulvae consist of two brown coloured spermathecae, each spermatheca is narrower posteriorly. Ducts are parallel and located between the spermathecae.

Comment: Adult male and females of *A. argyroides* were collected in June.

Habitat and Distribution

Argyroides is often found in the webs of other spiders, especially in webs of *Nephila*, *Gasteracantha*, *Argiope*, sometimes *Latrodectus* and others. Walckenaer (1842) collected *A. argyroides* while the spider was hanging down from oak tree: “prise le 4 Septembre, tombée d'un chêne secoue dans les bois de chênes du comté de Burke”. O.P.-Cambridge (1872) collected *A. argyroides* on webs of *Cyrtophora* (Araneidae). We collected our two samples from İzmir locality on the web of *Araneus circe* (Savigny, 1825). The other female was collected from web of Araneidae, from Antalya locality, while *A. argyroides* was hanging in the web upside-down with the front pairs of legs folded.

A. argyroides is distributed in Mediterranean countries, Canary Islands, West Africa, Seychelles Islands (Levy, 1985; Platnick, 2010). The Turkish specimens represent the north easternmost record of its known zoogeographical range. Therefore, the recording of this species from Turkey widens its distribution in the Mediterranean region.

Acknowledgments

The authors would like to thank Prof. Dr. Gökay Kaynak (Uludağ University, Department of Physics) for allowing them to use Leica M205 C Stereo Microscope (Research Foundation of Uludağ University Project No: F-2005/4).

References

- Agnarsson, I. 2004. Morphological phylogeny of cobweb spiders and their relatives (Araneae, Araneoidea, Theridiidae). *Zool. J. Linnean Soc.*, 141: 447-626.
- Agnarsson, I., Coddington, J.A. & Knoflach, B. 2007. Morphology and evolution of cobweb spider male genitalia (Araneae, Theridiidae). *J. Arachnol.*, 35: 334-395.
- Bayram, A., Kunt, K.B. & Danişman, T. 2010. *The Checklist of the Spiders of Turkey*. Version 10.1.0. Online at <http://www.spidersofturkey.com>
- Cambridge, O. P.-. 1872. General list of the spiders of Palestine and Syria, with descriptions of numerous new species, and characters of two new genera. *Proc. zool. Soc. Lond.*, 1871: 212-354.
- Exline, H. & Levi, H.W. 1962. American spiders of the genus *Argyroides* (Araneae, Theridiidae). *Bull. Mus. Comp. Zool. Harvard*, 127: 75-204.
- Kaya, R.S., Yağmur, E.A. & Kunt, K.B. 2009. The first record of genus *Neospintharus* Exline, 1950 (Araneae: Theridiidae) from Turkey. *Serket*, 11(3/4): 87-92.
- Levi, H.W. & Levi, L.R. 1962. The genera of the spider family Theridiidae. *Bull. Mus. Comp. Zool. Harvard*, 127: 1-71.
- Levy, G. 1985. Spiders of the genera *Episinus*, *Argyroides* and *Coscinida* from Israel, with additional notes on *Theridion* (Araneae: Theridiidae). *J. Zool., Lond.*, (A), 207: 87-123.
- Platnick, N.I. 2010. *The world spider catalog*, version 10.5. American Museum of Natural History, online at <http://research.amnh.org/entomology/spiders/catalog/index.html>
- Walckenaer, C.A. 1842. *Histoire naturelle des Insects Aptères*. Paris, 2: 1-549.

New records of ground spiders from Turkey (Araneae: Gnaphosidae)

Osman Seyyar¹ and Hakan Demir²

¹ Department of Biology, Faculty of Science and Arts, Niğde University, TR-38039 Niğde, Turkey

² Department of Biology, Faculty of Science and Arts, Gazi University, TR-06500 Ankara, Turkey

Corresponding e-mail address: osmanseyyar@hotmail.com, ozyptila@gmail.com

Abstract

Three ground spider species are recorded for the first time from Turkey: *Leptodrassus albidus* Simon, 1914, *Nomisio excerpta* (O. P.-Cambridge, 1872) and *Zelotes scrutatus* (O. P.-Cambridge, 1872). Diagnostic descriptions and photos of general habitus and male palpal organ of *Leptodrassus albidus* are provided. It is the first record of genus *Leptodrassus* from Turkey.

Keywords: Gnaphosidae, Araneae, new records, Turkey.

Introduction

The spider fauna of Turkey, despite of its outstanding zoogeographical situation, is rather poorly studied compared to other regions of the world. However, Gnaphosidae is the most studied spider family in Turkey but it is still not adequately studied. Gnaphosidae is one of the big spider families, which contains worldwide 2075 species from 112 genera (Platnick, 2010). In Turkey, 120 species of 29 genera have so far recorded (Seyyar *et al.*, 2008, 2009; Kovblyuk *et al.*, 2009; Panayiotou *et al.*, 2010). Here, we record genus *Leptodrassus* Simon, 1878 and three gnaphosid species for the first time from Turkey.

Material and Methods

In this study, the specimens were obtained by manual collection and from under stones in west and north of Turkey. The specimens were preserved in 70% ethanol. Examined specimens were deposited in the Arachnology Museum of Niğde University (NUAM). The identification and photos were made by means of a SZ61 Olympus stereomicroscope.

Abbreviations used: ALE = anterior lateral eye; AME = anterior median eye; C = conductor; E = embolus; OL = opisthosoma length; OW = opisthosoma width; PL = prosoma length; PME = posterior median eye; PW = prosoma width; r = retrolateral process of tegulum; RTA = retrolateral tibial apophysis; TL = total length; v = ventral process of tegulum; VA = ventral apophysis. All measurements are in millimetres.

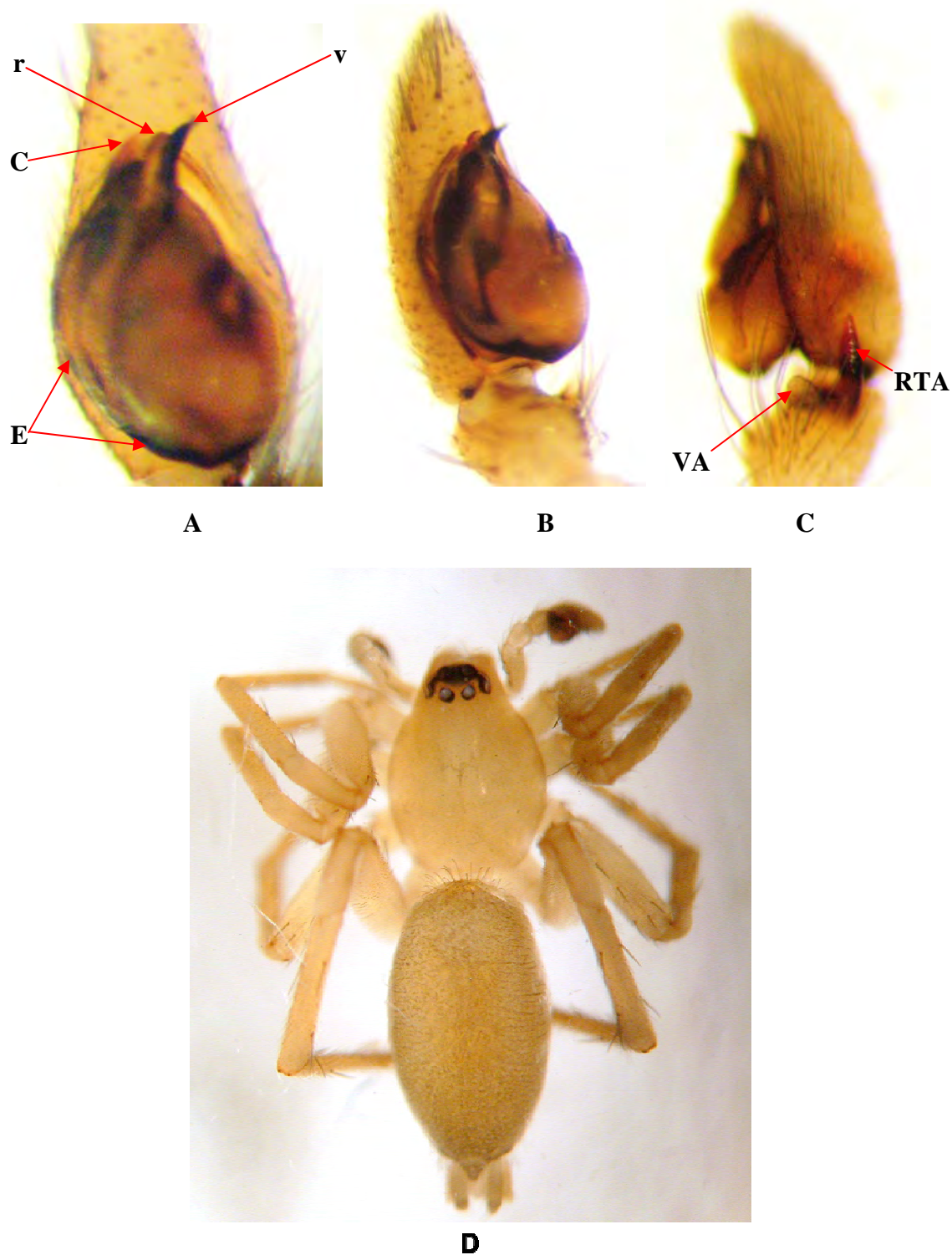


Fig. 1. *Leptodrassus albidus* Simon, 1914: Male palp, A. ventral view, B. prolateral view, C. retrolateral view; D. Male habitus.

Results

The general characteristics of Turkish specimens of both *Nomisio excerpta* (O. P.-Cambridge, 1872) and *Zelotes scrutatus* (O. P.-Cambridge, 1872) are similar to other Mediterranean congeneric species (Chatzaki *et al.*, 2002). The *Leptodrassus albidus* Simon, 1914 specimens are similar to Greek specimens description and drawings (Chatzaki *et al.*, 2002).

Leptodrassus albidus Simon, 1914

Material: Turkey, Denizli Province, Çivril district, surrounding of Işıklı lake, (38°16'077"N, 29°55'498"E), 827 m, 2♂♂, 18.IX.2008, Leg. M. Cemal Darılmaz. Gümüşhane Province, Şiran District, 1♂, 18.VI.2008, Leg. Kemal Kurt. The spiders were found under stones.

Description: Measurements, TL: 4.5-4.7; PL: 2.0-2.1; PW: 1.35-1.36; OL: 2.5-2.7; OW: 1.45-1.47. Carapace slightly narrowed in front; pale yellow and its ocular area darker; cephalic area slightly elevated. Thoracic groove indistinct in the middle. Anterior row of eyes nearly straight, posterior row slightly recurved in dorsal view; AME relatively large and touching ALE, lateral eyes smallest, circular and touching each other; PME oval and bigger than lateral eyes, separated by more than one diameter. Chelicerae, labium and endites nearly of the same colour of the carapace. Chelicerae with small fangs, with two big retromarginal teeth. Labium triangular in shape. Endites rectangular. Sternum heart-shaped, same colour as carapace, bordered by thin brown strip. Abdomen yellow to brown and without dorsal scutum. Legs yellowish. Palp with 3 ventral spines. Retrolateral tibial apophysis dark and blade-like process. Ventral tibial apophysis light and small. Tegulum with two processes. Conductor small and transparent. Embolus long, curved and disappears at apex. Median apophysis absent (Fig. 1).

Comment: Adult males of this species were collected in September. This species is rare in Turkey, because we did not find it before during our trips in different parts of Turkey. *L. albidus* occurs in Mediterranean countries: Spain, France, Italy, Malta, Greece and Israel. Recording of this species from Turkey widens its distribution. Adult females have not yet been collected from Turkey.

World distribution: Spain to Crete, Azores and Israel (Platnick, 2010; Levy, 2009).

Nomisio excerpta (O. P.-Cambridge, 1872)

Material: Turkey, Afyon Province, Çay district, Çayır yazı village, (38°22'468"N, 30°44'550"E), 1112 m, 1♂, 3♀♀, 27.VI.2007, Leg. M. Cemal Darılmaz. The spiders were found under stones.

Description and drawings: see Chatzaki *et al.* (2002); Levy (1995).

World distribution: Canary Islands, Tunisia, Crete, Israel (Platnick, 2010).

Zelotes scrutatus (O. P.-Cambridge, 1872)

Material: Turkey, Denizli Province, Honaz district Yukarı dağdere village (37°46'621"N, 29°21'901"E), 959 m, 2♂♂, 3♀♀, 07.V.2008, Leg. M. Cemal Darılmaz. The spiders were found under stones.

Description and drawings: see Chatzaki *et al.* (2003); Levy (1998).

World distribution: Africa to Central Asia (Platnick, 2010).

References

- Chatzaki, M., K. Thaler & M. Mylonas 2002. Ground spiders (Gnaphosidae; Araneae) of Crete (Greece). Taxonomy and distribution. I. *Revue suisse de Zoologie*, 109: 559-601.
- Chatzaki, M., K. Thaler & M. Mylonas 2003 Ground spiders (Gnaphosidae; Araneae) from Crete and adjacent areas of Greece. Taxonomy and distribution. III. *Zelotes* and allied genera. *Revue suisse de Zoologie*, 110: 45-89.
- Kovblyuk, M.M., Seyyar, O., Demir, H. & Topçu, A. 2009. New taxonomic and faunistic data on the gnaphosid spiders of Turkey (Aranei: Gnaphosidae). *Arthropoda Selecta*, 18(3-4): 169-187.
- Levy, G. 1995. Revision of the spider subfamily Gnaphosinae in Israel (Araneae: Gnaphosidae). *Journal of Natural History*, 29: 919-981.
- Levy, G. 1998. The ground-spider genera *Setaphis*, *Trachyzelotes*, *Zelotes*, and *Drassyllus* (Araneae: Gnaphosidae) in Israel. *Israel Journal of Zoology*, 44: 93-158.
- Levy, G. 2009. New ground-spider genera and species with annexed checklist of the Gnaphosidae (Araneae) of Israel. *Zootaxa*, 2066: 1-49.
- Panayiotou E., Kaltsas D., Seyyar, O. & Chatzaki M. 2010. Revision of the genus *Berinda* (Araneae, Gnaphosidae) in the East Mediterranean with the description of two new species, *Zootaxa*, 2362: 44-54.
- Platnick, N.I. 2010. *The world spider catalog*, version 10.5. American Museum of Natural History, online at <http://research.amnh.org/entomology/spiders/catalog/index.html>
- Seyyar, O., Ayyıldız, N. & Topçu, A. 2008. Updated checklist of ground spiders (Araneae: Gnaphosidae) of Turkey, with zoogeographical and faunistic remarks. *Entomological News*, 119 (5): 509-520.
- Seyyar, O., Ayyıldız, N. & Topçu, A., 2009. Description of a new species of the genus *Nomisia* Dalmas, 1921 (Araneae: Gnaphosidae) from Turkey with some faunistical remarks. *Zootaxa*, 2006: 62-68.

Additional notes on crab spider fauna of Turkey (Araneae: Thomisidae and Philodromidae)

Hakan Demir ¹, Metin Aktaş ¹ and Aydın Topçu ²

¹ Department of Biology, Faculty of Science and Arts, Gazi University, TR-06500 Ankara, Turkey

² Department of Biology, Faculty of Science and Arts, Niğde University, TR-51200 Niğde, Turkey

Corresponding e-mail address: ozyptila@gmail.com

Abstract

The spider species *Xysticus cor* Canestrini, 1873 and *Philodromus pulchellus* Lucas, 1846 of families Thomisidae and Philodromidae are recorded from Turkey for the first time. Photographs of genitalia and general habitus of these species are presented.

Keywords: Thomisidae, Philodromidae, Araneae, new records, Turkey.

Introduction

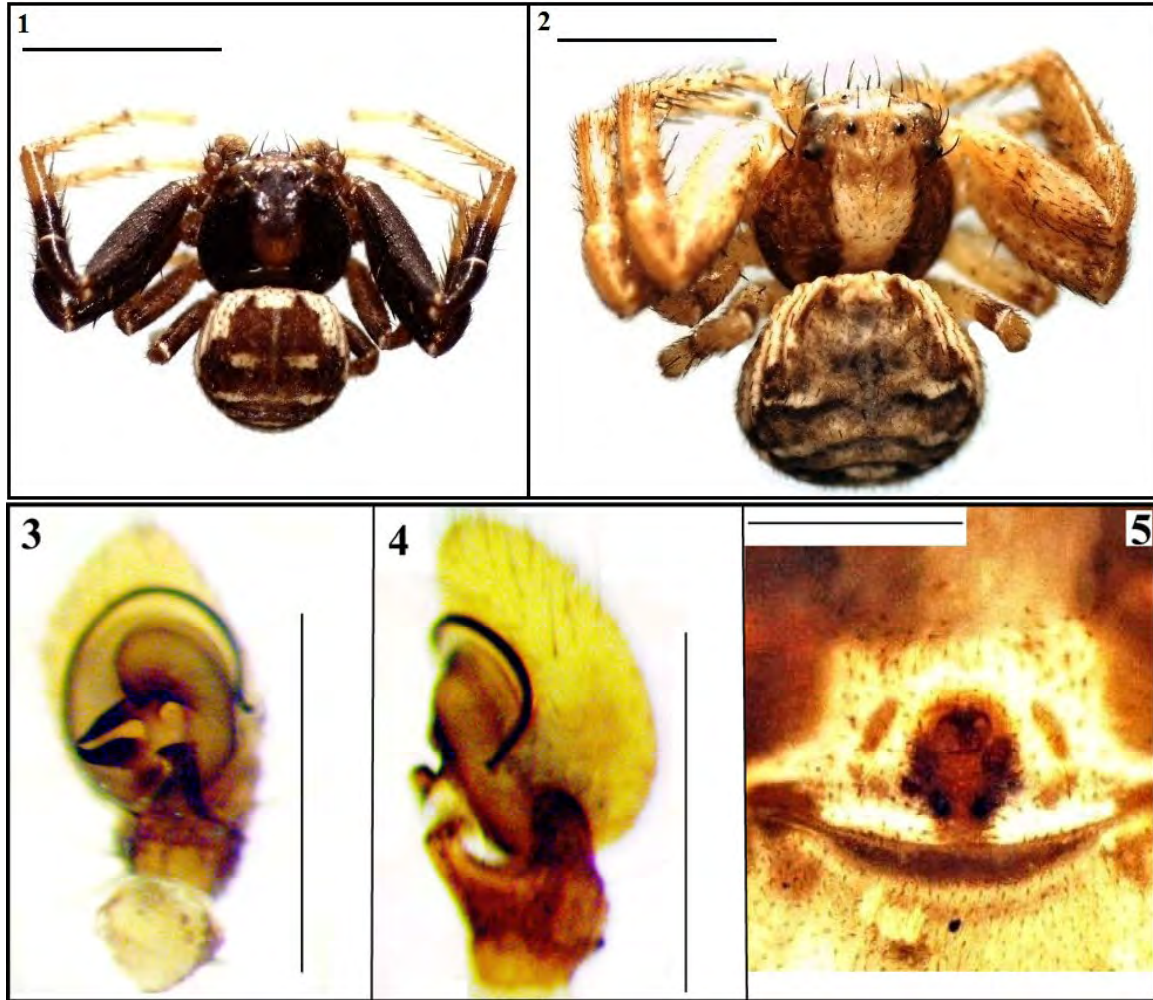
The Thomisidae, commonly called "crab spiders", is a big spider family comprising 173 genera and 2101 species worldwide (Platnick, 2010), of which 78 species of 12 genera are known from Turkey (Demir, 2008b; Demir *et al.*, 2008a, b, 2009a, b; Bayram *et al.*, 2008). The great diversity of form and colour shown by the Thomisidae relates to their exploitation of a wide variety of habitats and their often remarkable capacity for camouflage, sometimes even to the extent of slowly changing colour. The majority of species are rather crab-like in appearance, have the first two pairs of legs longer than the rest, and can walk sideways, as well as forwards and backwards (Roberts, 1995).

Philodromidae or "running crab spiders" is a family of laterigrade, i.e. sideways walking, spiders with essentially equal length of all legs. Philodromids have been regarded as a subfamily of Thomisidae by early authors, but since the detailed study of Homann (1975) their family status is generally accepted (see Platnick, 2010). They are swift runners and actively climb about plants, possibly helped by their legs scopulae and claw tufts. For the most part, they live on vegetation and are often collected by sweeping, the foliage in fields and meadows (Levy, 1977). Worldwide, 533 species of Philodromidae have been described in 29 genera (Platnick, 2010), with only 29 species belonging to 3 genera recorded from Turkey (Demir, 2008a; Demir *et al.*, 2010).

In this study, we present two new records for the Turkish araneofauna.

Material and Methods

In this study, the specimens were collected from eastern Mediterranean region of Turkey. The specimens were preserved in 70% ethanol. The identification was made by means of a SZX61 Olympus stereomicroscope. Examined specimens were deposited in the GUZM (Zoology Museum of Gazi University) and NUAM (Arachnology Museum of Niğde University).



Figs. 1-5: *Xysticus cor* Canestrini, 1873. 1-2. General habitus. 1. Male. 2. Female. 3-4. Left male palp. 3. Ventral view. 4. Retrolateral view. 5. Epigyne (ventral view). Scales: 1-2: 2 mm, 3-5: 0.5 mm.

Results

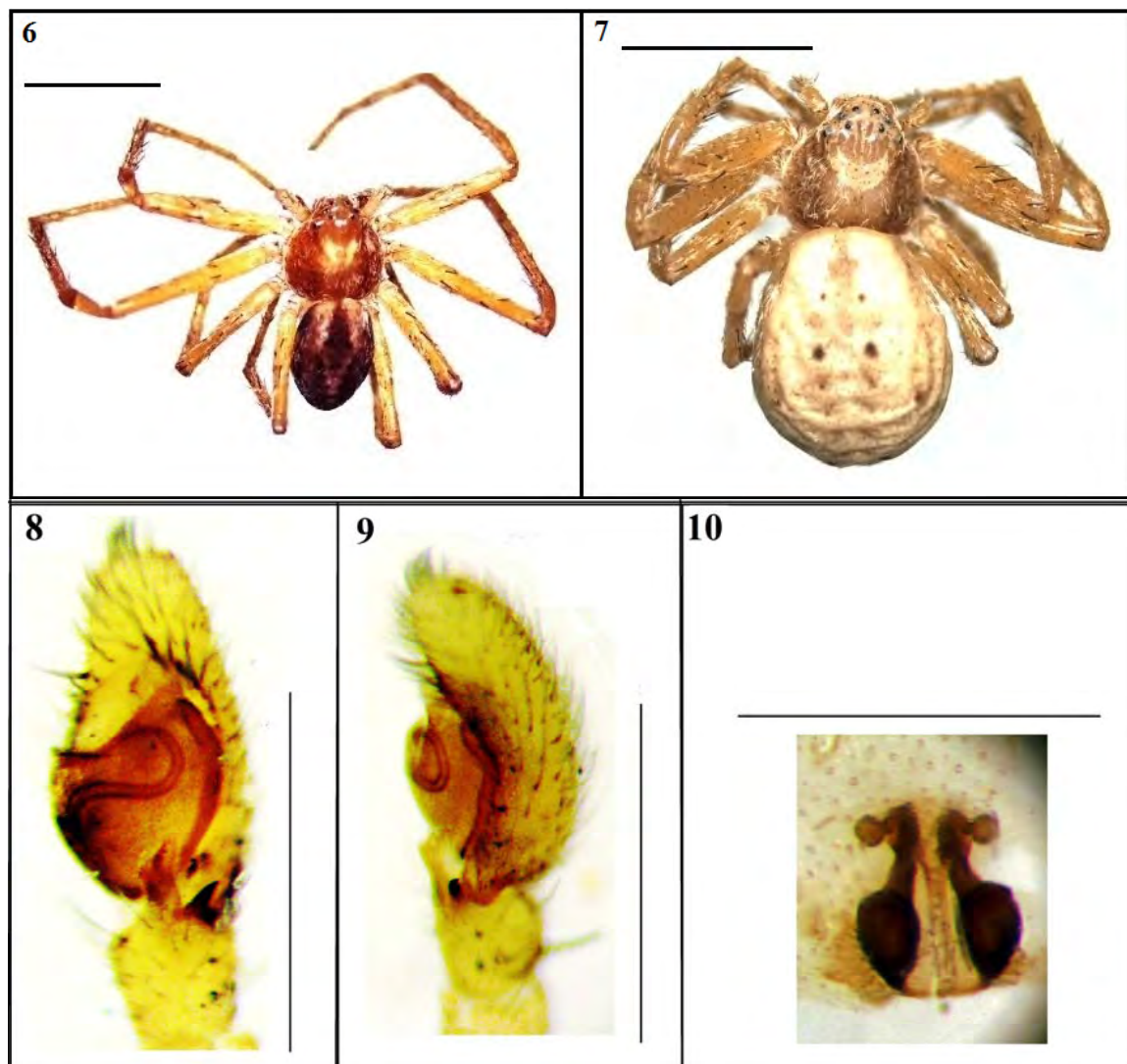
Xysticus cor Canestrini, 1873 (Figs. 1-5)

Material examined: TURKEY: *Adana province*, 1♀ (NUAM), Aladağ, Meydan Plateau 1, 37°31'N, 35°23'E, 925m, 19.06.2007, 1♀ (NUAM), Darılık village, 37°35'N, 35°27'E, 950m, 19.06.2008, 1♀ (NUAM), Büyüksoflu village, 37°33'N, 35°09'E, 937m, 19.06.2008, 1♂ 2♀♀ (GUZM), Eğner village, 37°25'N, 35°26'E, 242m, 29.04.2009; 1♂ 1♀ (NUAM), Tufanbeyli, Bozgüney village, 38°15'N, 36°20'E, 1584m, 12.05.2008, 1♂ 1♀ (NUAM), İğdebel village, 38°16'N, 36°22'E, 1621m, 12.05.2008, 1♀ (NUAM), Kayırcık village, 38°09'N, 36°17'E, 1325m, 12.05.2008, 1♂ 1♀ (NUAM), Çakırlar village, 38°19'N, 36°17'E, 1556m, 12.05.2008; 1♂ 1♀ (NUAM), Saimbeyli, Obruk

şelalesi, 37°59'N, 36°05'E, 1005m, 12.05.2008, 1♂ 1♀ (NUAM), Yardibi village, 37°51'N, 36°07'E, 738m, 12.06.2008; 2♂♂ 3♀♀ (NUAM), Feke, Köleli village, 37°52'N, 35°48'E, 1269m, 30.04.2009, 2♀♀ (NUAM), Çürükler village, 37°52'N, 35°57'E, 1522m, 30.04.2009; 3♀♀ (GUZM), Kozan, Çulluuşağı village, 37°40'N, 35°55'E, 716m, 19.05.2009, 1♂ 1♀ (GUZM), Gedikli village, 37°30'N, 35°52'E, 399m, 19.05.2009, 1♂ 1♀ (GUZM), Karahamzalı village, 37°30'N, 35°52'E, 399m, 19.05.2009; **Hatay province**, 1♂ (NUAM), Belen, Müftüler village, 36°29'N, 36°08'E, 662m, 25.03.2008, 1♂ (NUAM), Kıcı village, 36°28'N, 36°16'E, 628m, 14.05.2008; 1♂ (NUAM), Dört Yol, Karakese 1, 36°49'N, 36°17'E, 875m, 24.04.2008, 1♂ (NUAM), Karakese 2, 36°48'N, 36°17'E, 735m, 24.04.2008; 1♀ (NUAM), Belen-Antakya 1, 36°16'N, 36°11'E, 101m, 14.05.2008; 1♀ (NUAM), Belen-Antakya 2, 36°21'N, 36°11'E, 206m, 14.05.2008; **İçel province**, 1♂ 3♀♀ (NUAM), Silifke, Kocaoluk village, 36°40'N, 33°54'E, 1402m, 21.04.2007, 1♂ (NUAM), Silifke castle, 36°22'N, 33°55'E, 133m, 21.04.2008, 1♂ (NUAM), Ortaören village, 36°27'N, 33°43'E, 652m, 21.04.2008; 1♀ (NUAM), Anamur, Güngören village, 36°12'N, 32°38'E, 780m, 17.04.2008, 1♂ 1♀ (NUAM), Çamlıpınar village, 36°11'N, 32°41'E, 989m, 17.04.2008, 7♂♂ 2♀♀ (NUAM), Halkalı village, 36°23'N, 32°56'E, 1364m, 22.04.2008, 2♀♀ (NUAM), Evciler village, 36°11'N, 32°55'E, 556m, 22.04.2008, 1♂ (GUZM), Mut, 36°38'N, 33°26'E, 436m, 29.04.2009, 1♂ 2♀♀ (NUAM), Kavaközü village, 36°53'N, 33°23'E, 1560m, 18.04.2008, 2♀♀ (NUAM), Çömelek village, 36°43'N, 33°44'E, 1300m, 18.04.2008, 1♂ 1♀ (NUAM), Sertavul 1, 36°48'N, 33°19'E, 1255m, 19.04.2008, 1♂ 2♀♀ (NUAM), Sertavul 2, 36°51'N, 33°17'E, 1498m, 19.04.2008, 1♂ (GUZM), Zeyne village, 36°26'N, 33°31'E, 415m, 29.04.2009, 1♂ (GUZM), Bozdoğan village, 36°41'N, 33°13'E, 676m, 29.04.2009, 1♂ 2♀♀ (GUZM), Kurtuluş village, 36°30'N, 33°32'E, 105m, 29.04.2009, 1♂ 1♀ (GUZM), Göksu village, 36°33'N, 33°26'E, 123m, 29.04.2009; 1♂ (NUAM), Tarsus, Gülek, 37°12'N, 34°48'E, 815m, 20.04.2008, 2♂♂ (NUAM), Kandil sırtı, 37°17'N, 34°44'E, 1340m, 20.04.2008, 1♀ (GUZM), Kaburgediği village, 37°08'N, 34°48'E, 711m, 20.04.2008; 2♀♀ (NUAM), Erdemli, Çiftçipınar village, 36°43'N, 34°20'E, 325m, 21.04.2008, 1♀ (NUAM), Karayakup village, 36°44'N, 34°24'E, 190m, 21.04.2008, 1♀ (NUAM), Karakız göleti, 36°51'N, 34°13'E, 1605m, 21.04.2008, 1♂ (NUAM), Erdemli 3, 36°42'N, 34°05'E, 1298m, 21.04.2008, 1♀ (NUAM), Tömük 1, 36°47'N, 34°20'E, 793m, 21.04.2008, 1♀ (NUAM), Erdemli 2, 36°40'N, 34°08'E, 886m, 21.04.2008; 1♂ (NUAM), Gülnar, Balandız, 36°22'N, 33°46'E, 712m, 21.04.2008, 1♂ 1♀ (NUAM), Köseçobanlı village, 36°25'N, 33°09'E, 1319m, 22.04.2008, 1♀ (NUAM), Göksu village, 36°45'N, 33°10'E, 596m, 22.04.2008; 2♀♀ (NUAM), Değnek village, 37°02'N, 34°23'E, 1215m, 20.04.2008; 1♀ (NUAM), Arslanköy, 36°59'N, 34°16'E, 1390m, 20.04.2008; 2♀♀ (NUAM), Fındıkpınarı village, 36°54'N, 34°23'E, 1215m, 20.04.2008; 2♀♀ (NUAM), Doğançay village, 36°51'N, 34°26'E, 742m, 20.04.2008; **Kahramanmaraş province**, 2♀♀ (NUAM), Göksun, Gölpınar village, 37°58'N, 36°30'E, 1544m, 20.05.2007, 1♀ (NUAM), Mehmetbey village, 38°05'N, 36°27'E, 1544m, 20.05.2007; 1♀ (NUAM), Andırın-Geben, 37°37'N, 36°24'E, 1281m, 15.05.2008; 1♀ (NUAM), Andırın-Torun 1, 37°33'N, 36°20'E, 894m, 15.05.2008; 1♀ (NUAM), Andırın-Torun 2, 37°31'N, 36°22'E, 610m, 15.05.2008; 1♀ (NUAM), Andırın, Sarımollalı village, 37°35'N, 36°35'E, 1184m, 21.05.2009; 1♂ (GUZM), Andırın-Geben 3, 37°42'N, 36°30'E, 1267m, 21.05.2009; **Osmaniye province**, 4♀♀ (NUAM), Yarpuz valley, Boğaz plateau, 37°05'N, 36°20'E, 587m, 23.05.2007, 4♀♀ (NUAM), 24.04.2008; 3♂♂ 6♀♀ (NUAM), Yarpuz village, 37°03'N, 36°25'E, 903m, 01.05.2007, 1♂ (NUAM), 27.03.2008; 1♂ (NUAM), Zorkun-Erzin, 36°58'N, 36°18'E, 1264m, 01.05.2007; 1♀ (NUAM), Bahçe, Yaylalı village, 37°17'N, 36°37'E, 382m, 22.05.2007; 1♂ 1♀ (NUAM), Zorkun, Olukbaşı plateau, 36°58'N, 36°19'E, 1520m, 23.05.2007, 1♀ (NUAM), 18.06.2008, 1♀ (NUAM),

Karınca plateau, 36°58'N, 36°19'E, 1520m, 27.06.2007, 2♀♀ (NUAM), Armutdüzü plateau, 37°01'N, 36°16'E, 805m, 18.06.2008; 2♀♀ (NUAM), Zorkun-Erzin, 36°58'N, 36°18'E, 1264m, 18.06.2008.

World Distribution: Spain, Portugal, France, Switzerland, Austria, Italy, Hungary, Azores (Ono & Martens, 2005; Platnick, 2010).



Figs. 6-10: *Philodromus pulchellus* Lucas, 1846. 6-7. General habitus. 6. Male. 7. Female. 8-9. Left male palp. 8. Ventral view. 9. Retrolateral view. 10. Spermathecae (dorsal view). Scales: 1-2: 2 mm, 3-5: 0.5 mm.

***Philodromus pulchellus* Lucas, 1846 (Figs. 6-10)**

Material examined: TURKEY: **Adana province**, 1♂ (NUAM), Pozantı, Beledik 1, 37°21'N, 34°55'E, 798m, 19.06.2007, 1♂ (NUAM), Beledik 2, 37°19'N, 34°58'E, 571m, 19.06.2007; **Hatay province**, 1♀ (NUAM), Erzin, Isos harabeleri, 36°58'N, 36°07'E, 47m, 04.05.2007; 1♀ (NUAM), Samandağı, Çörükçü village, 36°04'N, 36°00'E, 129m, 27.06.2007, 1♂ 1♀ (NUAM), Fidanlı village, 36°09'N, 36°01'E, 146m, 27.06.2007; 1♂ (NUAM), Yayladağı, Yeşiltepe village, 35°59'N, 36°02'E, 741m, 27.06.2007, 1♂ (NUAM), Güzelyurt village, 35°55'N, 36°03'E, 507m, 27.06.2007, 7♀♀ (NUAM), Hisarcık village, 35°57'N, 36°06'E, 910m, 27.06.2007; 1♂ (NUAM), Dört Yol, Karakese 1, 36°49'N, 36°17'E, 875m, 24.04.2008, 2♂♂ (NUAM), Karakese 2, 36°48'N,

36°17'E, 735m, 24.04.2008; 1♂ (NUAM), Belen, Kıcı village, 36°28'N, 36°16'E, 628m, 14.05.2008; 1♀ (NUAM), Belen-Antakya 2, 36°21'N, 36°11'E, 206m, 14.05.2008; **İçel province**, 1♂ (NUAM), Mut, 36°38'N, 33°26'E, 436m, 21.04.2008, 2♀♀ (NUAM), Dağpazarı village, 36°48'N, 33°25'E, 1442m, 18.04.2008, 1♂ 1♀ (NUAM), Demirkapı village, 36°54'N, 33°28'E, 1450m, 18.04.2008, 1♂ 2♀♀ (NUAM), Çivi village, 36°49'N, 33°32'E, 1390m, 18.04.2008, 1♀ (NUAM), Bozdoğan village, 36°41'N, 33°13'E, 676m, 21.04.2008, 1♂ 2♀♀ (NUAM), Kurtseyu village, 36°30'N, 33°32'E, 105m, 21.04.2008, 1♂ 2♀♀ (NUAM), Alahan, 36°46'N, 33°21'E, 911m, 19.04.2008, 1♀ (NUAM), Sertavul 2, 36°51'N, 33°17'E, 1498m, 19.04.2008, 2♀♀ (NUAM), Sertavul 3, 36°54'N, 33°16'E, 1550m, 19.04.2008; 2♀♀ (NUAM), Değirmendere village, 34°31'E, 37°02'N, 1286m, 20.04.2008; 2♀♀ (NUAM), Değnek village, 37°02'N, 34°23'E, 1215m, 20.04.2008; 1♀ (NUAM), Arslanköy, 36°59'N, 34°16'E, 1390m, 20.04.2008; 1♂ 2♀♀ (NUAM), Gülnar, Göksu village, 36°45'N, 33°10'E, 596m, 21.04.2008, 3♂♂ (NUAM), Çukurkonak village, 36°23'N, 33°19'E, 1082m, 22.04.2008, 2♀♀ (NUAM), Kayrak village, 36°20'N, 33°31'E, 1213m, 22.04.2008; 1♀ (NUAM), Tarsus, Berdan barajı, 36°57'N, 34°50'E, 132m, 29.04.2008, 1♀ (NUAM), Belen village, 37°02'N, 34°41'E, 565m, 29.04.2008, 1♂ (GUZM), Gülek 2, 37°19'N, 34°46'E, 1436m, 02.07.2009, 1♀ (GUZM), Gülek 3, 37°13'N, 34°45'E, 1028m, 02.07.2009, 1♀ (GUZM), Kurtçukuru village, 37°09'N, 34°45'E, 526m, 02.07.2009, 1♀ (GUZM), Kaburgediği village, 37°08'N, 34°48'E, 711m, 02.07.2009, 1♀ (GUZM), Çamalan, 37°11'N, 34°48'E, 778m, 02.07.2009; **Kahramanmaraş province**, 1♂ (NUAM), Karacasu village, 37°29'N, 36°01'E, 637m, 21.05.2007; 3♀♀ (NUAM), Türkoğlu, Kızıleniş village, 37°20'N, 36°46'E, 655m, 22.05.2007, 3♂♂ 3♀♀ (GUZM), İmalı village, 37°20'N, 36°43'E, 1104m, 22.05.2009; **Osmaniye province**, 5♂♂ 7♀♀ (NUAM), Bahçe, Nohut village, 37°11'N, 36°31'E, 700m, 17.06.2008, 1♀ (NUAM), Aşağı Arıcaklı village, 37°11'N, 36°36'E, 375m, 17.06.2008, 13♂♂ 6♀♀ (NUAM), 22.05.2007, 1♂ (GUZM), 20.05.2009; 1♂ 1♀ (NUAM), Zorkun 1, 37°01'N, 36°17'E, 765m, 23.05.2007; 2♂♂ (NUAM), Yarpuz 1, 37°02'N, 36°26'E, 1132m, 23.05.2007; 1♂ 10♀♀ (NUAM), Hieropolis Castle, 37°10'N, 36°11'E, 100m, 24.05.2007, 2♀♀ (NUAM), 26.06.2007, 4♀♀ (NUAM), 18.06.2008, 2♂♂ 4♀♀ (GUZM), 20.05.2009, 5♂♂ 25♀♀ (NUAM), 13.05.2008, 2♀♀ (GUZM), 01.07.2009; 1♂ (NUAM), Zorkun, Karınca yaylası, 36°58'N, 36°19'E, 1520m, 18.06.2008; 10♂♂ 11♀♀ (GUZM), Yarpuz valley, 37°05'N, 36°20'E, 600m, 20.05.2009. **World Distribution:** Mediterranean: Algeria, France, Spain, Israel, Italy, Cyprus, Lebanon, Portugal, Tunisia, Greece (Levy, 1977; Platnick, 2010).

Acknowledgments

We are very grateful to the Scientific and Technological Research Council of Turkey (Project No. 106T133) and Gazi University Scientific Research Project Unit (Project No. 05/2009–13) for financial support of this work.

References

- Bayram, A., Kunt, K.B., Özgen, İ., Bolu, H., Karol, S. & Danışman, T. 2008. A crab spider *Tmarus piger* (Walckenaer, 1802) (Araneae; Thomisidae) new for Turkish araneofauna. *Turkish Journal of Arachnology*, 1(2): 141-144.
- Demir, H. 2008a. An updated checklist of the Philodromidae (Araneae) of Turkey with zoogeographical remarks. *Serket*, 11(1): 7-12.
- Demir, H. 2008b. An updated checklist of the Thomisidae (Araneae) of Turkey with zoogeographical remarks. *Serket*, 11(2): 37-50.

- Demir, H., Aktaş, M. & Seyyar, O. 2008a. The female of *Xysticus pseudorectilineus* (Wunderlich, 1995) (Araneae: Thomisidae) from Turkey. *Zootaxa*, 1674: 65-68.
- Demir, H., Seyyar, O. & Aktaş, M. 2008b. A poorly known species of the spider genus *Xysticus* C. L. Koch (Araneae, Thomisidae) in Turkey. *Archives of Biological Sciences*, 60(4): 17-18.
- Demir, H., Aktaş, M. & Topçu, A. 2009a. New records of little-known species of *Xysticus* C. L. Koch, 1835 in Turkey (Araneae: Thomisidae). *Zoology in the Middle East*, 46: 99-102.
- Demir, H., Aktaş, M. & Topçu, A. 2009b. A new species of the genus *Synema* Simon, 1864 (Araneae: Thomisidae) from Turkey. *Biologia*, 64(4): 742-744.
- Demir, H., Aktaş, M. & Topçu, A. 2010. On the occurrence of some running crab spiders (Araneae: Philodromidae) in Turkey. *Acta Zoologica Bulgarica*, 62(1): 103-106.
- Homann, H. 1975. Die Stellung der Thomisidae und der Philodromidae im System der Araneae (Chelicerata, Arachnida). *Z. Morph. Tiere*, 80: 181-202.
- Levy, G. 1977. The philodromid spiders of Israel (Araneae: Philodromidae). *Israel Journal of Zoology*, 26: 193-229.
- Ono, H. & J. Martens. 2005. Crab spiders of the families Thomisidae and Philodromidae (Arachnida: Araneae) from Iran. *Acta Arachnologica*, 53(2): 109-124.
- Platnick, N.I. 2010. *The world spider catalog*, version 10.5. American Museum of Natural History, online at <http://research.amnh.org/entomology/spiders/catalog/index.html>
- Roberts, M.J. 1995. *Spiders of Britain and Northern Europe*. Harper-Collins, London, 383 pp.

Serket (2010) vol. 12(1): 23-31.

Hersiliidae of Sudan (Araneida: Hersiliidae)

Hisham K. El-Hennawy
41, El-Manteqa El-Rabia St., Heliopolis, Cairo 11341, Egypt
E-mail: el_hennawy@hotmail.com

Abstract

Two species of two genera of family Hersiliidae are recorded from Sudan, i.e., *Hersilia caudata* Savigny, 1825 and *Hersiliola eltigani* sp. n. It is the first record of genus *Hersiliola* in Sudan. A distribution map of the two species in Sudan is presented.

Keywords: *Hersilia caudata*, *Hersiliola eltigani*, Hersiliidae, Spiders, Sudan.

Introduction

Family Hersiliidae Thorell, 1870 is one of the twenty families of spiders recorded from Sudan. It includes 168 species, of 15 genera, among 41253 spider species all over the world (Platnick, 2010; Marusik, *et al.*, 2010) (Table 1). Only one hersiliid species is already recorded from Sudan, i.e. *Hersilia caudata* Savigny, 1825.

Benoit (1967) recorded *Hersilia caudata* and described a new species from Sudan (*Hersilia hirtiventris* = *H. caudata*). Foord (2005) discussed the systematics and distribution of the Hersiliidae of the Afrotropical region (Foord & Dippenaar-Schoeman, 2006). *H. caudata* is recorded from three localities in Sudan (Foord, 2005). On 6 August 2008, one juvenile *Hersilia* spider was found among plants in the campus of Shendi University, 16°40'39.7"N, 33°25'17.9"E, Alt. 367m.

Four *Hersiliola* specimens, 1♀, 2s♂, 1j, were collected from Sudan. They were found under stones at Kordufan Mountain's versant, 13°04'25.9"N, 30°20'51.3"E, Alt. 606m, on 30 July 2008. One subadult male was kept alive and reared to moult on 17-18 August 2008 to be adult. It was preserved on 19 August 2008. In this region, I saw a hare, a pair of birds among *Acacia* trees, plenty of butterflies, and a limbless lizard (Malaga is its vernacular name there). There were several kinds of insects, i.e., wasps, beetles, lepidopteran larvae, hemipteran and neuropteran nymphs, in addition to chilopods,

Compsobuthus scorpions, *Biton* and *Galeodes* sun-spiders (solpugids), and spiders of nine families.

The distribution of the two hersiliid species of Sudan is plotted on a map. Abbreviations used: C = cephalothorax; *Et* = tip of embolus; L = length; *Te* = tegular apophysis; TL = total length; W = width. All measurements are in millimetres.

Table 1. Genera of Hersiliidae, their geographic range and number of described species.

South America	Mediterranean	Africa	Asia	Australia
Iviraiva [2] Yabisi [2] Ypypuera [3]	Tama [1]	Prima [1] Tyrotama [8]	Deltshevia [2] Duninia [2] Ovtsharenkoia [1] Promurricia [1]	Tamopsis [50]
	Hersilia [72]			
	Hersiliola [10]			
		Murricia [4]		
Neotama [9]				

[] = number of species

Systematics

Family **Hersiliidae** Thorell, 1870

“Long-spinnered spiders”

Diagnosis: Small to medium sized (5-10 mm) araneomorph spiders; ecribellate; entelegyne; legs with three tarsal claws; carapace ovoid, flattened, with eight eyes on a large tubercle; posterior spinnerets long and slender with apical segment strongly tapering (Jocqué & Dippenaar-Schoeman, 2006).

Distribution: In the tropical, subtropical, and temperate regions.

Lifestyle: Hersiliids have diverse lifestyles, ranging from wandering tree-trunk-dwellers [e.g. *Hersilia*] to ground-dwelling web-builders [e.g. *Hersiliola*]. The hunters run around their prey while producing a band of silk to ensnare them. The webs on the ground are very peculiar curtains hanging under rocks and enclosing pebbles (Jocqué & Dippenaar-Schoeman, 2006).

Key to the genera of Hersiliidae recorded from Sudan (Adopted from Foord, 2005)

1. Metatarsi biarticulate in legs I, II, and IV; leg I longest; leg III about 0.3 times leg I. Chelicerae armed; posterior lateral spinnerets > carapace width; thoracic region of carapace dorso-ventrally flattened. *Hersilia*
- . Metatarsi uniarticulate; leg IV (or II) longest; leg III > 0.5 times leg I. Chelicerae unarmed; posterior lateral spinnerets < carapace width; thoracic region of carapace sloping. *Hersiliola*

Genus *Hersilia* Savigny, 1825

There are 72 species of genus *Hersilia* recorded from Africa, Yemen, Socotra, Asia, and Australia (Platnick, 2010); 28 species of them are African. Savigny described genus *Hersilia* and *Hersilia caudata* from Egypt in a work accomplished by Audouin (1825) [El-Hennawy, 2000]. *Hersilia caudata* is recorded from Cape Verde Island, West Africa to China (Platnick, 2010).

Hersilia caudata Savigny, 1825 Figs. 1-4.

H. c. Audouin, 1825: 115, pl. 1, f. 8 (♀).

H. c. Audouin, 1827: 318, pl. 1, f. 8 (♀).

H. c. O. P.-Cambridge, 1876: 560-562, pl. 58, f. 6 (j).

H. diversa O. P.-Cambridge, 1876: 561 (j).

H. hirtiventris Benoit, 1967: 23, f. 6-7 (♀).

H. c. Benoit, 1967: 34, f. 37, 40, 44 (♂♀).

H. c. Rheims, Brescovit & van Harten, 2004: 336-340, f. 1-3, 7-15 (♂♀).

H. c. Foord, 2005: 81-84, f. 9, 26b, 33 (♂♀).

H. c. Foord & Dippenaar-Schoeman, 2006: 59, f. 132-138, 200 (♂♀).

World Distribution: Middle East (Egypt, Palestine-Israel), Africa (Benin, Burkina Faso, Cape Verde Islands, Cameroon, Chad, Guinea, Ivory Coast, Mali, Nigeria, Senegal, Somalia, Sudan, Togo), Asia (Yemen, Socotra, China?), and Australia.

Distribution in Sudan (Fig. 4):

- Kawa (13°43'N, 32°30'E), 200 km south of Khartoum, 1♀, 2.xii.1961, J.L. Cloudsley-Thompson, MRAC 120872 [MRAC = Musée Royal de l'Afrique Centrale, Tervuren, Belgium]

- Reuk (10°45'N, 32°50'E), 1♀, 4.xii.1961, J.L. Cloudsley-Thompson, MRAC 120833

- Bahr-el-Ghazal, Rumbek (6°47'N, 29°40'E), 1 juv. male, 11.iii.1964, G. Lewis, MRAC 126486

- Shendi (16°40'39.7"N, 33°25'17.9"E, Alt. 367m), 1 juv., 6.viii.2008, among plants in the campus of Shendi University.

Description. [Redescribed in detail by Foord (2005)]

O. P.-Cambridge (1876: 561-562) described *Hersilia caudata* and proposed a new name to his immature specimens of Cairo. He said: "The following description of the examples I met with may perhaps call the attention of araneologists to the differences noted; and possibly the true *H. caudata* may eventually prove to be a distinct species, in which case I would propose for that now described the name *Hersilia diversa*."

The length of the largest immature female captured is rather over 3½ lines [= 7.4 mm]. The colour of the cephalothorax is a deep blackish brown, rather the palest along the middle line, on the hinder slope, and a little above the lateral margins; the upper part of the caput is black, with a short brightish orange-yellow longitudinal streak on the hinder part between the eyes of the hind central pair. The clypeus (which equals in height two thirds of that of the facial space) is orange-yellow above and dull yellow on its lower part, the middle of which has a short longitudinal white streak with a blackish patch on each side of it. This arrangement of colours gives a very distinct and diversified appearance to the "facies," and appears to be pretty well defined in all the examples met with (*vide* fig. 6 b).

The *legs* are of a dull yellowish hue, marked and broadly annulated with yellow and blackish-brown; these markings form a broken longitudinal line of deepish black-brown on the fore sides of the femoral joints. The *palpi* are similar to the legs in colour, and marked with black-brown on their upper or fore sides.

The *abdomen* is of a dull yellowish brown above, thickly punctuated with pale yellowish points mixed with a few blackish spots here and there, chiefly near the cephalothorax, the lateral margins of the upperside of the abdomen are very distinctly defined by the inner edge of the black markings on the sides; this well-defined edge is denticulate or strongly crenellated; along the middle line of the fore half is a strong and very distinct black longitudinal marking, denticulate or irregularly jagged on its edges;

this marking is broadest near its middle, and comes to a blunt point about two thirds of the distance from the cephalothorax to the spinners, and is followed by some broken angular bars, or chevrons, which decrease in length towards the hinder extremity of the abdomen, in addition to the above markings, there are four pale transverse wavy lines, which cross the whole of the upperside of the abdomen, the two foremost, however, being interrupted by the longitudinal black marking; the sides of the abdomen are marked, but not regularly, with blackish brown spots and small markings, some of them assuming an oblique direction; but none of the lateral markings extend far down towards the underside, which is (as are also the sternum, maxillae, and labium) of a plain yellowish hue devoid of markings. The long spinners of the superior pair are dull yellow faintly marked or annulated with yellowish brown, or sometimes with brownish black. in fact I saw, and captured, only females, and all those immature.”

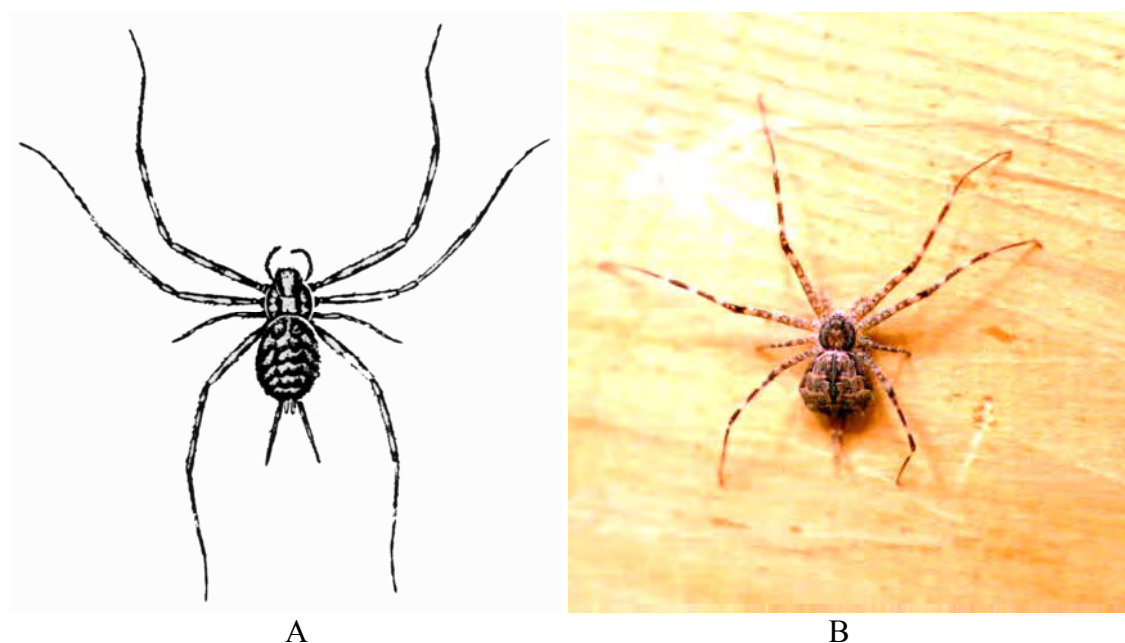


Fig. 1. *Hersilia caudata* Savigny, 1825 ♀.
A. Drawing by Savigny in Audouin (1825), pl. 1, fig. 8, near Cairo.
B. Photograph, Sohag, Upper Egypt.



Fig. 2. *Hersilia caudata* (?) immature, Shendi. Habitus, postero-dorsal view.

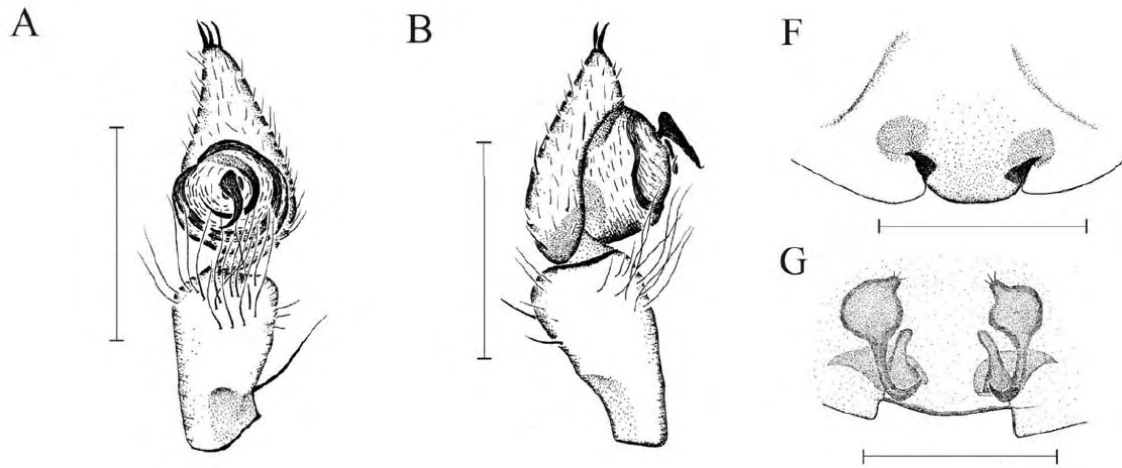


Fig. 3. *Hersilia caudata*: Male, left palp: A. ventral view, B. prolateral view. Female: F. epigyne, ventral view, G. vulvae, dorsal view. After Foord (2005, Chapter 2, Figure 9)



Fig. 4. Distribution map of *Hersilia* and *Hersiliola* species of Sudan.

- 1 = Shendi ($16^{\circ}40'39.7''\text{N}$, $33^{\circ}25'17.9''\text{E}$)
- 2 = Kawa ($13^{\circ}43'\text{N}$, $32^{\circ}30'\text{E}$), 200 km south of Khartoum
- 3 = Reuk ($10^{\circ}45'\text{N}$, $32^{\circ}50'\text{E}$)
- 4 = Bahr-el-Ghazal, Rumbek ($06^{\circ}47'\text{N}$, $29^{\circ}40'\text{E}$)
- 5 = Kordufan Mountain ($13^{\circ}04'25.9''\text{N}$, $30^{\circ}20'51.3''\text{E}$)

● = *Hersilia caudata*, ■ = *Hersiliola eltigani* sp. n.

Genus *Hersiliola* Thorell, 1870

There are 10 species of genus *Hersiliola* recorded from Mediterranean countries, Asia (Afghanistan, Iran, Turkey, Turkmenistan, Uzbekistan, China), and Africa (Mali, Nigeria, Cape Verde Is.) (Platnick, 2010; Marusik, *et al.*, 2010).

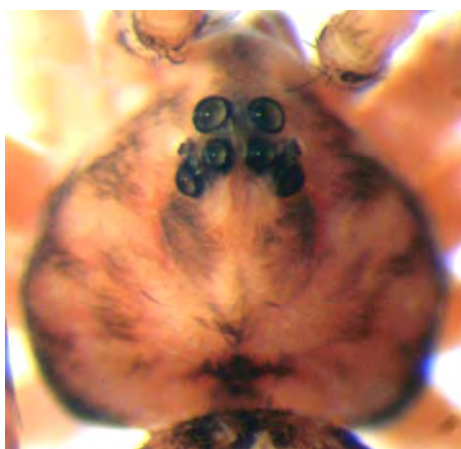
Diagnosis. [Modified after Marusik & Fet (2009)] *Hersiliola* can be easily distinguished from other hersiliid genera by short spinnerets (shorter than abdomen length) and the shape of copulatory organs: a digitate cymbium; flattened bulbus of the male palp [= discoid tegulum]; a small, hook-like, median tegular apophysis perpendicular to the axis of the palp; a filiform, elongate, spirally coiled embolus; elongate insemination ducts coiled around fertilization ducts and uncoiled upper loop; small [relatively smaller] seminal receptacles. [Redescribed in detail by Foord and Dippenaar-Schoeman (2005)]



5



6



7



8



9

Figs. 5-9. *Hersiliola eltigani* sp. n. 5-6. Habitus, dorsal view. 5. Male, alive. 6. Juvenile. 7-9. Female. 7-8. Dorsal view. 7. Carapace. 8. Abdomen. 9. Ventral view.

Hersiliola eltigani sp.n. Figs. 4, 5-14.

H. macullulata Foord & Dippenaar-Schoeman, 2005: 259-261, f. 2A-2E (♂ only, misidentified).

Material examined: Holotype ♂ (s♂ was kept alive and reared to moult on 17-18 August 2008 to be adult), Paratypes 1♀, 1s♂, 1j, under stones, on 30 July 2008, Kordufan Mountain's versant (13°04'25.9"N, 30°20'51.3"E, Alt. 606m), deposited in the Arachnid Collection of Egypt (ACE 20080730.1-4).

Etymology. The specific name is a patronym in honour of Prof. Dr. El-Tigani M. H. Allam, El-Khartoum, Sudan, who invited me to visit Sudan, to discover this new species.

Diagnosis. The male of *Hersiliola eltigani* sp.n. is most similar to *Hersiliola macullulata* (Dufour, 1831), from which it can be distinguished by the shape of the tegular apophysis which is sharply pointed and the position of the embolic base at about 4 o'clock. The female of *H. eltigani* sp.n. differs by an epigynum with a septum thinner than height of epigynal median plate.

Description

Colouration: *Male*: carapace pale yellowish brown, abdomen pale reddish brown (Fig. 5); *Female*: carapace reddish brown, abdomen more brownish (Figs. 7-8); *Juvenile*: carapace pale yellowish brown, lighter than male, abdomen lighter than carapace (Fig. 6). Carapace outer margin black. Both carapace and abdomen mottled with grey-brown patches. Abdomen with dorsal rhomboidal pattern. No mottling beneath (Fig. 9). Legs with wide annulations, faint in female and juvenile, very dark in male.

Male (Holotype). TL 3.50; Cephalothorax: L 1.59, W 1.75 (CL/CW 0.91); Sternum L 0.79; Abdomen: L 1.91, W 1.48. Legs measurements: Table (2).

Relative length of legs 85 : 91 : 52 : 100. Leg formula IV-II-I-III.

Table 2: ♂, Legs measurements (mm).

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total length
I	2.33	0.74	1.91	2.28	1.17	8.43
II	2.38	0.69	2.28	2.54	1.11	9.00
III	1.48	0.53	1.17	1.32	0.69	5.19
IV	2.65	0.58	2.60	3.07	1.01	9.91

Pedipalp: cymbium L 1.06, tegulum diameter 0.53; embolus with about 1.5 coils; embolic base at about 4 o'clock; tegular apophysis sharply pointed; tip of cymbium is shorter than the diameter of the tegulum (Figs. 10-12).

Female (Paratype). TL 3.97; Cephalothorax: L 1.59, W 1.64 (CL/CW 0.97); Sternum L 0.79; Abdomen: L 2.38, W 1.85. Legs measurements: Table (3).

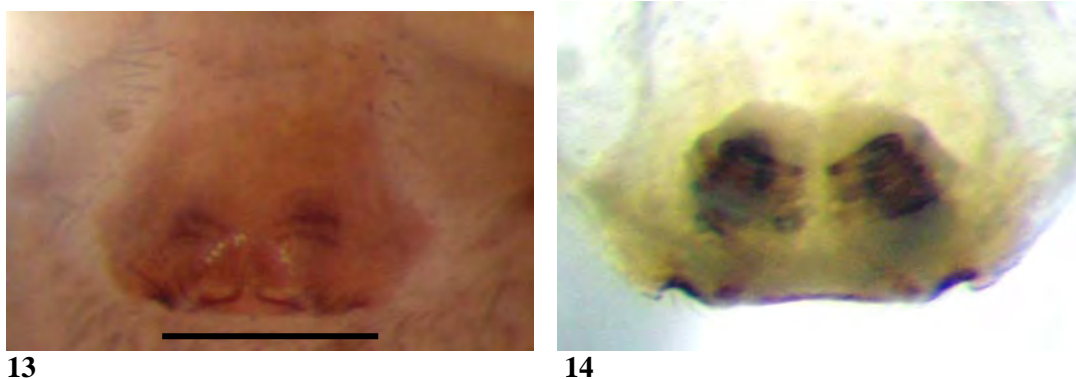
Relative length of legs 98 : 104 : 57 : 100. Leg formula II-IV-I-III.

Table 3: ♀, Legs measurements (mm).

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total length
I	2.17	0.58	1.70	1.85	0.95	7.25
II	2.23	0.64	1.85	2.07	0.95	7.74
III	1.43	0.42	0.64	1.11	0.64	4.24
IV	2.12	0.53	2.07	2.07	0.64	7.43



Figs. 10-12. *Hersiliola eltigani* sp. n. Male palp. 10. Retrolateral view. 11. Ventral view. 12. Prolateral view. Scale = 0.5 mm.



Figs. 13-14. *Hersiliola eltigani* sp. n. Female. 13. Epigynum, ventral view. 14. Vulvae, dorsal view. Scale = 0.5 mm.

Epigynum with a distinct median plate and windows; septum thinner than median plate height of epigynal plate; insemination duct with almost five coils around fertilization duct (Figs. 13-14).

World Distribution: Sudan and Burkina Faso.

Distribution in Sudan (Fig. 4): Kordufan Mountain's versant (13°04'25.9"N, 30°20'51.3"E, Alt. 606m).

Comment. Foord & Dippenaar-Schoeman (2005) described *Hersiliola macullulata* (Dufour, 1831) depending on males from Burkina Faso (MRAC 172.521, 207.790, 207.791). Those male specimens were misidentified. They are similar to the Sudanese male described here as *Hersiliola eltigani* sp. n. The female of *H. eltigani* is different from both *H. macullulata* and *H. versicolor* (Blackwall, 1865) of Cape Verde Islands.

Acknowledgments

I am grateful to Prof. Dr. El-Tigani M. H. Allam, the director of the Natural History Museum, University of Khartoum, who invited me to visit Sudan (23 July - 10 August 2008). His generosity, his kind help and his wide scope of both culture and science are unforgettable.

I am grateful too to Prof. Dr. Mashaal A. Saleh, the dean of Faculty of Science, Kordufan University who made my visit to Kordufan possible and hosted me there.

I am also grateful to Dr. Abd-El-Rahman El-Beshir the dean of Faculty of Science, Shendi University who made my visit to Shendi possible and hosted me there.

My sincere thanks are due to my Sudanese friends and colleagues Dr. Omar (Shendi University), Fathy, Serr, Sara, Aasem and Mohammad Hasan who helped me much during my visit to Kordufan and Shendi.

I am greatly indebted to my friend Prof. Dr. Yuri Marusik (Magadan, Russia) whose precious comments directed me to describe a new *Hersilola*. He sent me necessary literature too. His advices and the advice of my friend Prof. Dr. Victor Fet (Marshall University, USA) are appreciated.

References

Audouin, V. 1825. *Explication sommaire des planches d'Arachnides de l'Égypte et de la Syrie, Publiées par Jules-César Savigny*. In: Description de l'Égypte ou Recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française. Histoire Naturelle. Tome Premier 1809. Paris. 4e partie, pp. 99-186. Atlas: pls. 1-9 (Arachnides).

Audouin, V. 1827. *Ibid.* 2nd edition. vol. 22, pp. 291-430.

Benoit, P.L.G. 1967. Révision des espèces africaines du genre *Hersilia* Sav. et Aud. (Aran.-Hersiliidae). *Revue Zool. Bot. afr.*, 76: 1-36. [Not Seen]

Cambridge, O.P.-. 1876. Catalogue of a collection of spiders made in Egypt, with descriptions of new species and characters of a new genus. *Proc. zool. Soc. Lond.*, 1876: 541-630.

El-Hennawy, H.K. 2000. The first landmark in the route of Egyptian Arachnology : "*Explication Sommaire des Planches d'Arachnides de l'Égypte et de la Syrie*" (1825). *Serket*, 6(4): 115-128.

Foord, S.H. 2005. A Revision of the Afrotropical species of *Hersilia* Audouin (Araneae: Hersiliidae). pp. 50-167, Chapter 2 In: Systematics of the Hersiliidae (Araneae) of the Afrotropical Region. PhD thesis, 237 pp., University of Pretoria. On line at <http://upetd.up.ac.za/thesis/available/etd-02082006-161214/unrestricted/02chapter2.pdf>

Foord, S.H. & Dippenaar-Schoeman, A.S. 2005. A revision of the Afrotropical species of *Hersiliola* Thorell and *Tama* Simon with the description of a new genus *Tyrotama* (Araneae: Hersiliidae). *African Entomology*, 13(2): 255-279.

Foord, S.H. & Dippenaar-Schoeman, A.S. 2006. A revision of the Afrotropical species of *Hersilia* Audouin (Araneae: Hersiliidae). *Zootaxa*, 1347: 1-92. [Not Seen]

Jocqué, R. & Dippenaar-Schoeman, A.S. 2006. *Spider Families of the World*. Musée Royal de l'Afrique Central, Tervuren, 336 pp.

Marusik, Y.M. & Fet, V. 2009. A survey of east Palearctic *Hersiliola* Thorell, 1870 (Araneae, Hersiliidae), with a description of three new genera. *ZooKeys*, 16: 75-114.

Marusik, Y.M., Kunt, K.B. & Yağmur, E.A. 2010. A new species of *Hersiliola* Thorell, 1870 (Araneae, Hersiliidae) from Turkey. *ZooKeys*, 37: 27-34.

Platnick, N.I. 2010. *The world spider catalog*, version 10.5. American Museum of Natural History, online at <http://research.amnh.org/entomology/spiders/catalog/index.html>

Rheims, C.A., Brescovit, A.D. & van Harten, A. 2004. Hersiliidae (Araneae) from Yemen, with description of a new species of *Hersilia* Audouin, 1826 from Socotra Island. *Fauna of Arabia*, 20: 335-347.